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AUTHOR Fiene, Richard
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ABSTRACT

This paper suggests that community psychology may be going through an identity crisis because of its lack of empirical demonstrations of community intervention effectiveness, and an ecologically valid intervention research base. Although the majority of research in community psychology has used an individualistic paradigm that conceptualizes problems at an ecological level, a paradigm shift is presented that emphasizes an ecological approach intervening at the natural social systems level. An evaluation of a community child care program incorporating the model is provided as well as the conceptual framework, technology, methodology, and beginning stages of an empirical base describing cost benefit and cost effectiveness equations generated from the ecological model. (Author/JAC)

COMMUNITY PSYCHOLOGY'S SEARCH FOR A VIABLE PARADIGM: Establishing an Ecologically Valid Intervention Research Base

Richard Fiene, Ph.D.

Bureau of Information Systems
Harrisburg, PA

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INTRODUCTION

Community psychology has come upon hard ground recently and it appears that with the 1980's and the move towards fiscal and economic conservatism things are going to become even more difficult for community psychology (McClure (1980); Goodstein and Sandler (1978); Cowen (1978); and Rappaport 1977). For example, McClure and others have pointed out that the social activism of the 1960's is over, that now we must be accountable for the dollars spent and that unless empirical demonstrations of the efficacy of community interventions, (such as day care, community mental health centers, children and youth services--in-home services, counseling, homemaker services, foster care, etc.) for promoting human welfare are forthcoming, community psychology's survival is at stake. McClure further states in clarifying his position on empirical demonstrations that community psychology needs to develop an empirical research base that can clarify the relationship between individual functioning and organizational and community environments. He also feels that--and I agree wholeheartedly with this next statement and will come back to this later in greater detail--this community-organizational research base must be developed in natural or field settings if it is to have external or ecological validity (Campbell and Stanley, 1966).

Other researchers have been arguing that there is a need for all psychologists and not just community psychologists to begin to impact the larger social systems in our society--for example, Bronfenbrenner[1] has stated that we as psycologists must become more politically aware and use our knowledge base to impact regulatory and policy formulation for children and families. Richard Kearsley[2] has also asked: What have we done on a practical level to improve the quality of day care? What have we done to actively influence regulatory agencies? What have we done to promote standards of quality for children's services?

The interesting dilemma with the above is how community psychologist's have approached their research based on the study by McClure. They have conceptualized their research at the ecological level but their interventions have been at the individualistic level with no attempt to impact the larger systems level. However, this appears to be the result of the failure to develop a technology to assess the ecological or system level--community and organizational, and it is not the inability to conceptualize at this level.

What will be required? Developing a new technology in and of itself is not enough. It is going to require a total rethinking--a paradigm shift, the development of a conceptual framework. The individualistic paradigm must be supplemented with one that is more systems oriented, interdependent or of an ecological nature, in other words an ECOLOGICAL PARADIGM. After giving the reasons for using the term ecological, I will attempt to describe a new technology--data utilization with state information system and an assessment technique/methodology (applied multiple regression) that uses these technologies to generate cost benefit and cost effectiveness analyses.

There are a number of reasons for selecting the term Ecological to describe this paradigm shift. One, it is a term used in psychology by Bronfenbrenner in putting forth his Human Ecology Model where he talks about establishing ecological validity checks--to move from the laboratory to the real world of children and adults.

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1. Bronfenbrenner's argument for the establishment of "ecological validity" will be referred to on numerous occassions. This concept has grown from Kurt Lewin's "action research model" (1958).
2. Kearsley and other researchers have emphasized recently in an issue of APA Monitor the need for psychologist's to begin asking some very sensitive political questions.

Two, it generally refers to analyses involving individuals in their natural surroundings--none of the research described in this paper has been done in a laboratory.

Three, the term implies a certain interdependence or systems orientation which is at the heart of the technologies I will be describing.

Four, the potential social policy relevance of the ecological view argues favorably for its ability to respond to an increased emphasis on social relevance in the current posture of federal funding.

Five, ecology, the term, is not an uncommon concept in community psychology--emphasizing the notion of relativism.

Six, the ecological paradigm views community service as being increasingly expansive--the professional is seen as also a program planner, consultant, trainer and not only as a therapist.

Seven, it accounts for extra-psychological influences--i.e. political, economic, and bureaucratic.

Eight, it is a paradigm that accounts for both the advocate as well as the data user or pursuer.

CONCEPTUAL FRAMEWORK

Building on these ecological principles, in particular those put forth by Bronfenbrenner, who has clearly articulated a conceptual framework for doing research in the larger social systems, let's introduce a theoretical model describing the ecology of child care. This model's essence is borrowed from Bronfenbrenner's Human Ecology Model (1976). It depicts the various systems that impact upon the developing individual, in this case the child. The child care ecology is on a continuum beginning with the family and moving to other types of social institutions such as children's services, etc. (See Figure 1).

Insert Figure 1

There are four systems that are described in this theoretical model that provides us with our conceptual framework for developing the ecological paradigm--the microsystem, the mesosystem, the exosystem, and the macrosystem. The microsystem as defined has the greatest immediate effect on the child--it would include the child's own home, the day care classroom or family day care home or foster home.[3]

In moving away from the center, the other systems have a diminishing impact on the child in the immediate sense but could have tremendous impact in the long run. The emphasis required in formulating the Ecological Paradigm is to develop those levels which include the family, school, institution, government, essentially the meso and exosystem levels. These are the levels that involve the community and organization most directly which will help to form the assessment methodology.

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3. An in-depth analysis that develops a conceptual crosswalk between ecological theory (child care ecology) and state information systems has been prepared by Fiene (1980). This analysis gives examples of how to obtain answers to some of the hypotheses put forth in the human ecology model.

METHODOLOGY

Bronfenbrenner's Conceptual Framework (1977, 1978, 1979) does not lend itself readily to an assessment methodology; therefore there is the need to expand upon this concept. In order to describe the assessment methodology more clearly, the following formula is presented:

(FORMULA 1):

$$EP_t = (IC)\,(f\,(\Sigma EC_1 + \Sigma EC_2 + \Sigma EC_3 + \Sigma EC_4 + \ldots\ldots \ldots\ldots + \Sigma EC_5 + \ldots\ldots\ldots + \Sigma EC_n))^{3a}$$

Where: EP_t = Ecological Paradigm; IC = Individual functioning/component; EC = Ecological Component; f = factor of; EC1 = Community risk; EC2 = Community ability; EC3 = Organizational risk; EC4 = Organizational ability; EC5 = Family ability/rick; ECn = Other ecological ability/ risk variables.

Since we will be centering in on the community and organizational components there is the need to expand them definitionally:

EC1 = Community risk climate providing services to individuals--community risk climate would be the summation of factors such as housing opportunities, educational opportunities, unemployment rates, infant mortality rates, drop out rates from high school, crime indices, etc. (Cornelius & Baker, 1980; Diethorn & Fiene, 1980 have developed methods for assessing this component.)

EC2 = Community ability to provide services to individuals--community ability would be the summation of its ability to pay or provide for certain services--social services--day care, foster care, protective services, etc. This would account for the relative wealth of an area.

EC3 = Organizational risk in providing services to individuals--is the summation of such things as how effective are services--state of the art and meeting regulations--health and safety.

EC4 = Organizational ability to provide services to individuals--is the summation of the program's ability to handle individuals they presently have without keeping others waiting.

QUESTIONS AND INDICATORS

In order to develop the empirical base in community psychology and assess the relative impact of organizational and community environments on individual functioning, it is necessary to answer the following questions within the child care ecology:

1. Do regulations that OCYF promulgate concerning foster care, day care, group residential, day treatment, adoption, etc., have a positive impact on an individual child's life--are we making for a more stable environment, permanent environment life for the child and family?

3a. This general formula was then used to generate the following formulae for cost benefit and cost effectiveness equations:

(1) $CBR = bX_4^2$ where X_4 = unit cost and (2) $CAQ_2 = MX + B_1(PX - X_1) + B_2(SF - X_2)$ where: MX = model rate for day care programs; PX = program average score; X1 = individual program scores; X2 = size of program; SF = average size of programs.

2. Are we keeping families together or breaking them apart with our policies and service delivery?
3. Are we increasing the quality of life for families through our supportive services?
4. Are we decreasing rates of recidivism for these children who are in placement?
5. What impact does day care and child welfare services have on the family functioning and at what cost to society and to the community?
6. Does quality of care impact the children's development?
7. What impact does custodial versus high quality care have on children's lives?
8. What are the key indicators that place families at risk and deter their ability to provide quality child care for their children?
9. Where should we be allocating our limited resources, and to what services?

More specifically in the day care area we can define some additional questions that should be asked of the various systems in the ecological conceptual framework or theoretical model:

I Micro System

A. Physical Features

1) What are the differences between the quality of care provided by the public vs. private sector?
2) What are the differences between center and family day care?
3) What impact does the size of the setting have on care--small vs. large?
4) Are we isolating children from the real world in day care?
5) How much private space do children need?

B. Persons and Roles

1) What impact do males have on children who are cared for in day care?
2) What impact does the turnover/stability of staff have on children in day care?
3) How important are staff qualifications?
4) Does monitoring of day care centers have any impact on child outcomes?
5) What effect does group size and adult child ratio have on interactional patterns in day care?

II Meso System

A. Day Care and the Home

1) How do parents view themselves?
2) Does multiple caretakers influence orientation to adults?
3) How are roles at-home because of the limited time affected by having children in day care?
4) What are the goals and expectations of teachers and parents?

B. Day Care and the School

1) Do day care kids do better in school than children reared at home?

#. These questions are borrowed from Belsky's et al, The Ecology of Day Care, chapter to appear in M. Lamb (Ed.), Childrearing in Nontraditional Families, Hillsdale, N.J.: Lawrence Erlbaum, 1981.

III Exo System

1) Impact of day care on divorce!
2) Impact of family income and work satisfaction by day care!
3) Impact of forming friendships and interpersonal contacts in the community!
4) What impact would the elderly caring for youth have on attitudes towards the elderly?

IV Macro System

1) Impact of regulations!
2) Overall philosophy for families and children--ideology and tax policies!

From the above list there are three basic groups of data or overriding indicators: What are we doing for people? How effective are we? How efficient are we? But where do we go to get or find answers to these indicators and questions?

TECHNOLOGY

It has been argued by researchers (Peters 1980) that the natural level for program evaluation/monitoring and policy formulation is at the state level. It is the logical entry point for regulations, funding requirements, etc., (this position appears as if it will be strengthened politically with the new administration). However, with the state as the source of intervention, how does one manage information at this level? for this is an all pervasive system that includes thousands of individuals!

To manage this large system of information and to answer these questions within the child care ecology a technology consisting of three systems must be constructed: one is called a statistical reporting system (What are we doing for people); another is a programmatic reporting system (How effective are we?); and the last is a fiscal reporting system (How efficient are we?). (See Fiene, 1979 for a detailed presentation.)[5]

But how does this explain the EP (Ecological Paradigm) presented earlier? It does by means of proxy, where the three systems will give indications or monitor the well being of the four components of the meso and exo systems, in the following manner:

EC_1 = Community risk is monitored by the:
-statistical reporting system
EC_2 = Community ability is monitored by the:
-fiscal reporting system
EC_3 = Organizational risk is monitored by the:
-program reporting system
-fiscal reporting system
EC_4 = Organizational Ability is monitored by the:
-statistical reporting system
-fiscal reporting system

5. Definitions of these three systems are the following in the Ecological Paradigm: Program Reporting System--this is the program evaluation system of a state information system. Generally it is broken into three levels: licensing, monitoring, and evaluation. This compoent is also made up of two sub-systems: provider evaluation system and the purchase of service system; these two sytems make up the

At the state level and at the local level these three systems have remained relatively separate---(Statistical, Programmatic, Fiscal). What is proposed, with the proper quantification and measurement techniques built in, is to have the systems talk to each other--this can be done manually or through EDP means - it is ultimately data utilization. When this occurs (See Figure 2) cost benefit and cost analysis/effectiveness coefficients can be generated.

Insert Figure 2

In order to define this more clearly with cost benefit and cost analysis, let's borrow some systems/evaluation terms. Cost benefit is the result of crossing the fiscal and program systems which helps to define the quality of a program by knowing the inputs and the processes of service delivery. Cost analysis is the result of crossing all three systems which defines the effectiveness of a program by knowing the inputs, the processes of service delivery and the outcomes. The last crossing of systems is the fiscal and statistical reporting system which results in unit cost. This can be further defined as a measure of efficiency of a program by knowing the inputs and outputs of the program.

OUTCOME/RESULTS

An interesting phenomena was recorded when the Programmatic System data base was correlated with the Fiscal Reporting System Data Base of Pennsylvania Day Care Programs. Rather than a linear relationship what occurred was a curvilinear relationship that had a logarithmic base. (See Figure 3).

Insert Figure 3

In other words, as the cost reached a certain level (approximately $4000/yr./child in day care centers) the program quality did not increase in the same proportion. Other examples of impact measures are the following:

- Impacted the health of children in day care by increasing the levels of immunizations of those children attending day care centers.
- Impacting Regulations--have helped revise day care regulations based on the results obtained from the program reporting system.
- Permit sound policy decision making--resource allocation has been heavily influenced by the results of the systems of Ecopad (Ecological Paradigm).
- Ensure that day care promotes child development.
- The model is attempting to monitor and to change policy where necessary at the state level to keep children from re-entering the foster care system.
- Within the Youth Services System it is to monitor the offenses committed by youth by race to ascertain the length of time for commitments for these groups.
- Size of Program - mid-range programs provided higher quality of care to children--mid-range is defined as 50-75 children per site or center.

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5 (cont) the overall provider management system.
Statistical Reporting system--this component is made up of the client management system and the following sub-systems: client eligibility determination and authorization sub-systems; information and referral sub-system and the management information reporting system.
Fiscal Reporting System--this component keeps track of dollars spent and has one major system called the claims reimbursement system.

- Smaller programs are most expensive--it was found that this type of program was costing Pennsylvania the most money in terms of dollars spent.
- Training decisions--in one region it helped the region to put an RFP (Request for Proposal) in training.

As a footnote, a practical example of how the above model was used is in Pennsylvania where based on data from the program and fiscal reporting systems, ceilings on cost for day care services were established. These ceilings were established through the use of the Cost Benefit Curve just described. Based on the ceilings there was a savings of $5,000,000 which was then used to serve in excess of 1000 additional children.

CONCLUSION

There is nothing new in this presentation. Brofenbrenner and other researchers have been saying it for some time now. However, what is new is the utilization of a technology, a methodology, a data base and finally a new conceptual framework that exists within each state, and local information and program monitoring systems. All we need to do is change our frame of reference to shift our paradigm to one that is more systems, interdependent oriented; that is naturalistically, and ecologically valid. I, therefore, propose: The Ecological Paradigm (ECOPAD). It does not reflect an abandonment of interest in the individual, family or small group. Rather, it is a recognition of the intricate relationships between dimensions of social systems (Cowen, 1977).

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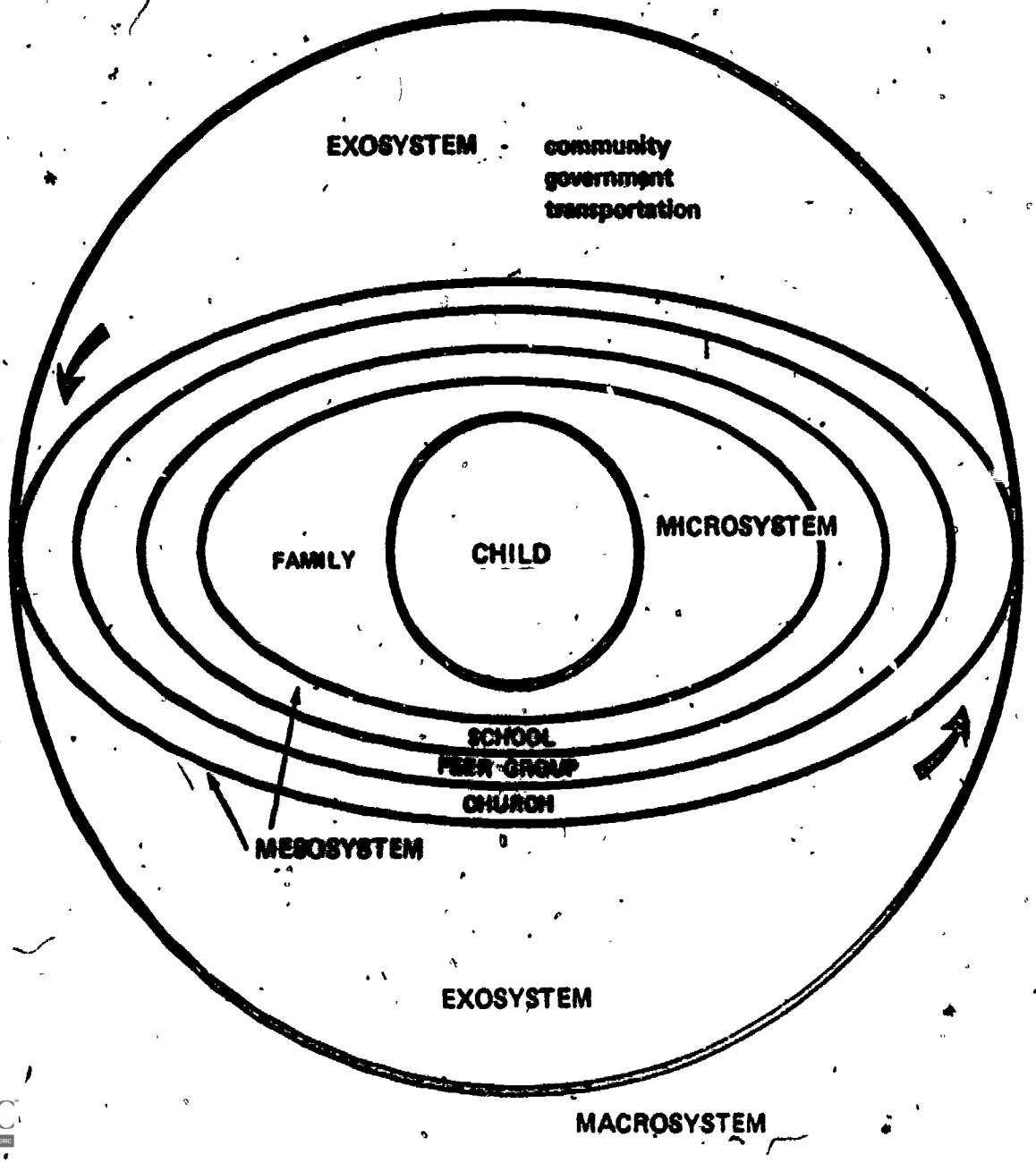


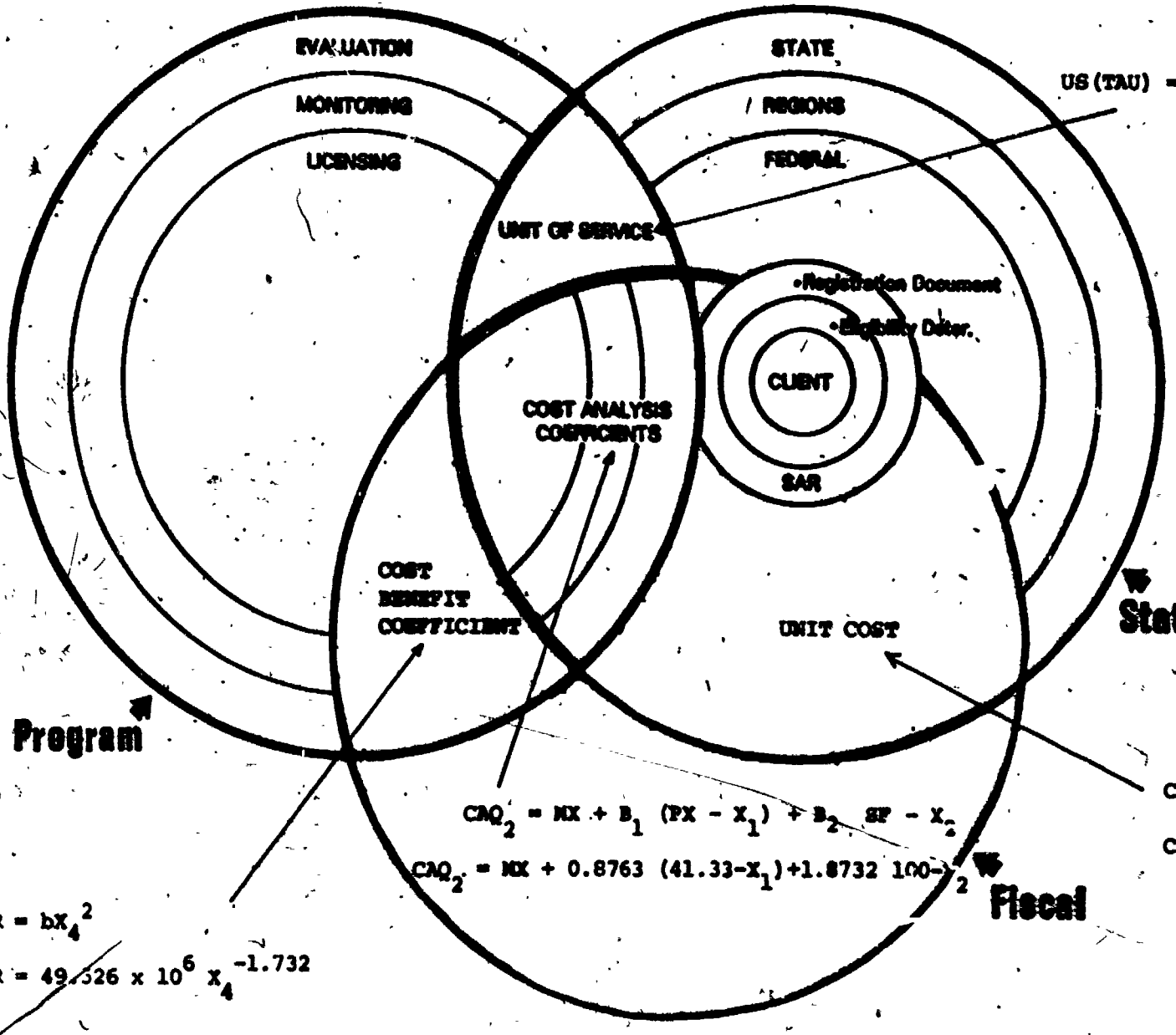
Microsystem: complex of relations between the developing person and environment in an immediate setting containing that person.

Mesosystem: comprises the interrelations among major settings containing the developing person at a particular point in his life.

Exosystem: extension of the mesosystem embracing other specific social structures, both formal and informal, that do not themselves contain the developing person but impinge upon or encompass the immediate settings in which that person is found, and thereby influence, delimit, or even determine what goes on there.

Macrosystem: refers to the overarching institutional patterns of the culture or subculture, such as the economic, social, educational, legal, and political systems, of which micro; meso-, and exosystems are the concrete manifestations.

ECOPAB [2]



US (TAU) = (I) (x) + (P) (x) + (S) (s)

$CAQ_2 = MX + B_1 (PX - X_1) + B_2 \ SF - X_2$

$CAQ_2 = MX + 0.8763 \ (41.33 - X_1) + 1.8732 \ 100 - X_2$

$CBR = bX_4^2$

$CBR = 49.326 \times 10^6 \ X_4^{-1.732}$

$CH2C = k \ (1/X_3)$

$CH2C = 4.00 \ (1/X_3)$

FIGURE 2

COST BENEFIT THEORETICAL CURVE

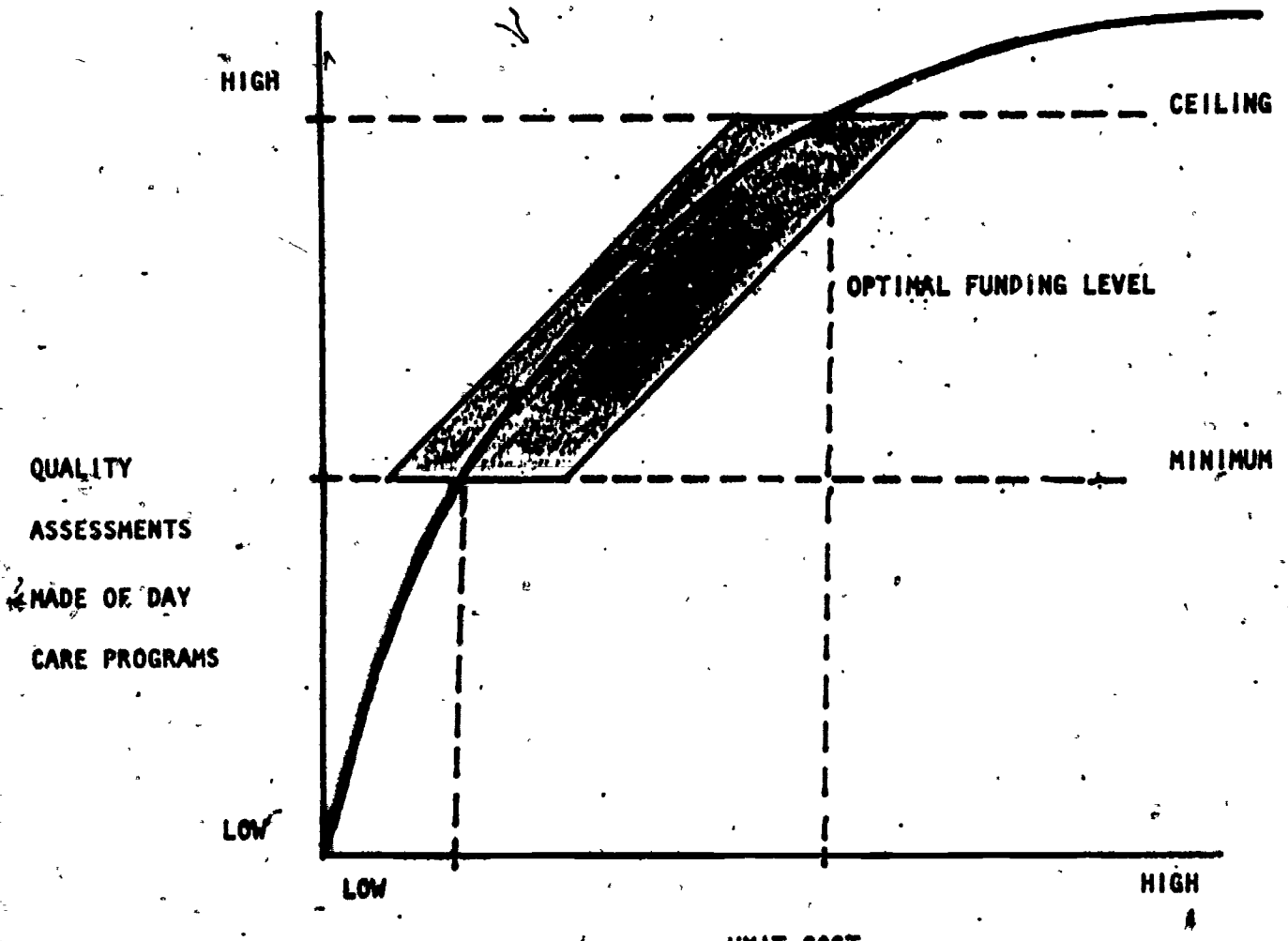


FIGURE 3